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Porringer-Top Tea Table

A project plan for a tea table with hand-shaped cabriole legs

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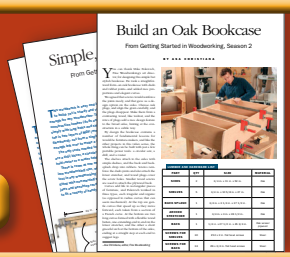

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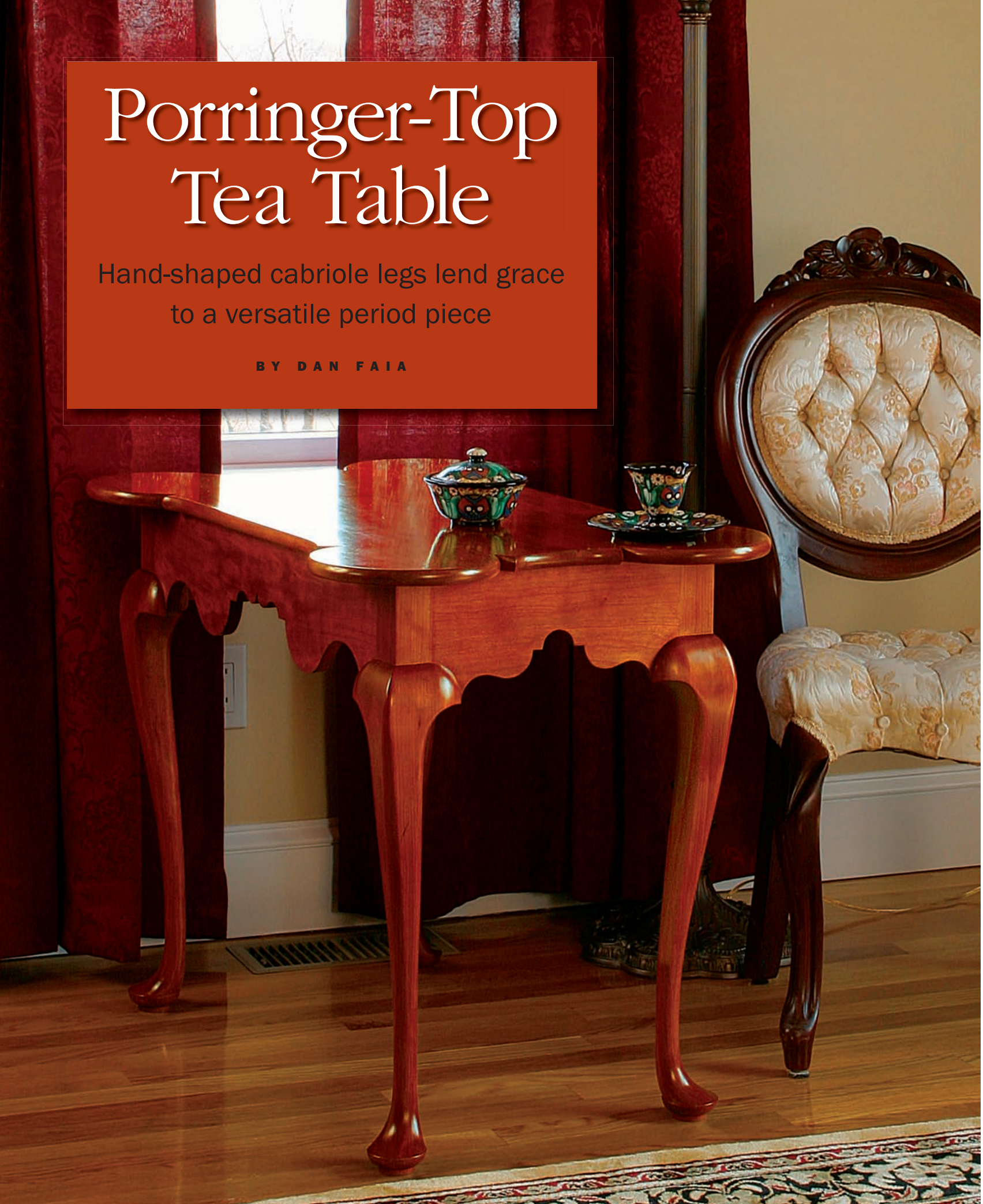
Porringer-Top Tea Table

Hand-shaped cabriole legs lend grace to a versatile period piece

BY DAN FAIA



When a client asked for a tea table recently, I built this one in the Queen Anne porringer style, named for the top's rounded, soup-bowl-shaped corners. I found the design in an antiques catalog. The original was built in Wethersfield, Conn., sometime between 1740 and 1760.

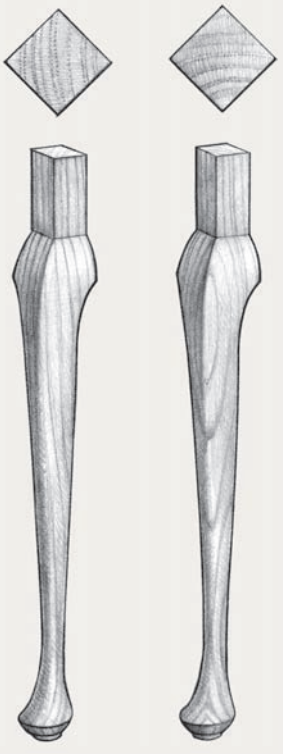
Tea tables were most popular from the William and Mary period in the early 1700s through the Empire period in the mid-1800s. Today, even though earlier dinnertimes have put an end to daily afternoon "teas," these tables still are useful as end tables or occasional tables.

This piece is also a great way to get started in building period reproductions. The design is simple, but there are challenging details in matching the grain, shaping the cabriole legs and transition blocks, and creating the uniquely shaped top. The project requires careful machine work and a delicate touch with hand tools. When you're done, you'll have a handsome, highly functional piece of furniture.

Seek consistent grain for a coherent look

Lumber selection and grain orientation are critical details for any furniture project. Using the

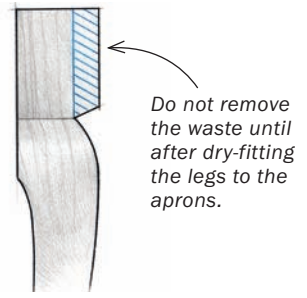
Bandsaw the legs



TWO WAYS TO ORIENT THE GRAIN

There are two options for the look of the legs: flow lines and bull's-eyes. Flow lines, used on this piece, keep a parallel vertical pattern that follows the leg's contours. Bull's-eyes are the sunburst patterns seen at the peak of the knee. You can get either pattern from the same blank, depending on how you orient the leg. End grain that runs from inside corner to outside corner will create flow lines (left). Side-to-side grain will produce bull's-eyes (right).

Rough-cut the profile on the bandsaw. *After turning the pad foot, trace the layout onto two faces of the blank and cut one face (above). Leave the waste area above the knee intact for now. Then tape the cutoffs back in place and cut the second face (left). The cutoffs support the work for safe and accurate cutting of the adjacent sides.*

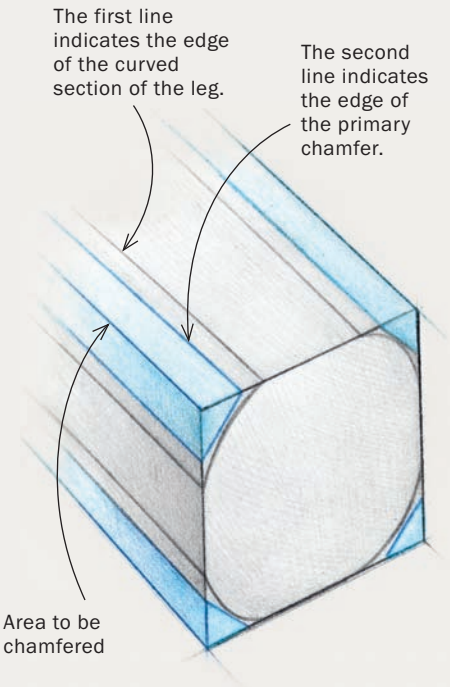


Shape the legs

LAY OUT THE PRIMARY CHAMFERS

Mark the edges of the curves. *Begin the layout for shaping the leg by drawing a pair of reference lines on each side, at equal distances from the corners. These are called centerlines because the two meet at the center of the leg's narrowest point.*

Mark the edge of the first chamfer. *Faia visualizes a "5/7" ratio to draw a new set of lines a little less than halfway from the reference lines to the corner on each side. He chisels to these lines in creating the first chamfers.*


The first line indicates the edge of the curved section of the leg.
The second line indicates the edge of the primary chamfer.
Area to be chamfered

Cut the first chamfer. *Use a chisel to remove the wood between the second layout lines (above). Stop the cut at the narrowest part of the leg, where the grain direction changes, and then work from the opposite direction. The sharply curved area just above the foot is hard to negotiate with the chisel. Follow up with a rasp to smooth the transition (below).*

Photos: Steve Scott; drawings: Bob La Pointe

right grain for individual parts can make the difference between a good piece and a great one. For grain consistency, I made the aprons and the slip-matched top from a single board. It might seem shameful to rip wide lumber into narrow pieces, but it pays off in the finished appearance.

Grain selection for the cabriole legs is even more important. Look for a 12/4 board with a rift-sawn end section, but be prepared to spend some time picking through the lumber to find it. Most pieces that will fit the bill will be rift for only half or three-quarters of the width. You'll rarely find a board that will yield any more than two legs side by side in the rift.

Turn the feet before shaping the legs

Start by rough-cutting the leg blanks longer than the finished leg. This leaves matching stock for two transition blocks, which you should trim off after the leg is turned and before it is shaped.

Begin by turning the pad foot on the center of the blank. Layout is done using plywood patterns derived from full-scale drawings. On the lathe, use a parting tool and a pair of calipers to set the pad's maximum diameter and to cut the fillet on which the foot will rest. Then make a rolling cut with a spindle gouge to establish the curve between the foot's widest point and the fillet. The last step on the lathe is to use the corner of the skew to make a shallow scribing cut that just begins the top of the foot. This will help you locate the toe later in the leg-shaping process.

While the blanks are square, cut or chop the mortises for the aprons, making sure to choose the proper inside corner for the grain selection. Label and trim off the transition blocks, and cut the legs to length.

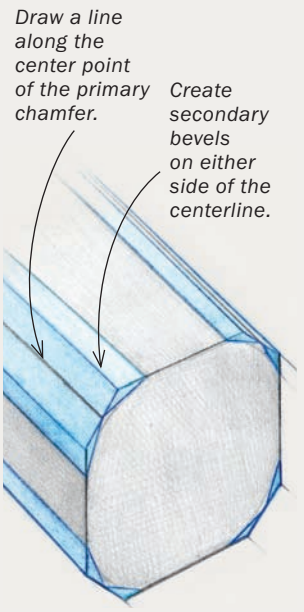
Time-honored cabriole layout method

Lay out the leg pattern on the two inside faces and bandsaw the profile. Do not bandsaw the top of the post, and stay proud of the pattern line by 1/16 in. or more above the knee. It is important to leave plenty of wood here for shaping later. Clean up the cuts with a spokeshave and a rasp, making each surface a fair curve.

I shaped the legs primarily with wide, flat chisels, removing wood in a series of chamfers until I arrived at a rounded profile. For consistency, I laid out the chamfers using a technique called the 5/7 rule.

At this small scale, the 5/7 rule isn't a precise measuring technique. It's a way of eyeballing the layout with consistent results (consistent enough, anyway, to please the eye). Start at the ankle by marking the center point of each side of the leg. From these marks, draw centerlines

LAY OUT THE SECONDARY CHAMFERS

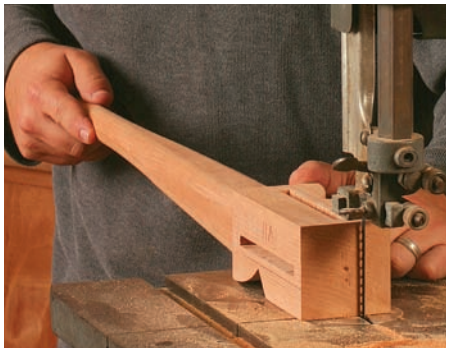


Lay out the next chamfers. *Mark centerlines on the newly created faces. These lines will be used in cutting a second set of chamfers.*

Cut the new facets. *Chisel away a triangular section of waste between the two centerlines. This cut is only about halfway to the line on either side of the corner (above). The remaining ridges are small enough to remove with a spokeshave (below left). Use rasps, files, and sandpaper to shape the leg to its finished contour (below right).*

Assemble the base

Profile the aprons. *Use chisels, rasps, and files to create a smooth surface after bandsawing the apron shape.*



Mark and trim the posts. *Dry-fit the aprons into the mortised leg posts and trace cut lines on the front of each post (top). The finished posts will be flush with the aprons. Cut on the waste side of the line (above) and plane the posts flush with the apron after glue-up.*

Glue up the base. *Use moderate clamping pressure and be sure to check the assembly for square.*

up and down the blank, maintaining the same dimension and following the curves created by the saw.

Your next marks should be a little less than halfway from these centerlines to each adjacent corner. To estimate this distance consistently, imagine that the space between each center point and each adjacent corner is divided into 12 equal parts. From each center, count five units toward the corners and make your marks at those locations. Draw additional layout lines from these marks up and down the blank.

Use a chisel and rasp to remove the material between these second layout lines, creating a broad chamfer. Now mark the centerlines of the chamfers. Refine the profile by paring about halfway in from these centerlines and the original ones to remove the newly created corners. This will create a set of narrower, secondary chamfers. Last, remove the ridges along these faces with a spokeshave. The corners should now be so close to round that no other division is needed. Use a rasp, file, and scraper to achieve the final shape.

Blocks transition from apron to knee

Cut the apron stock to the appropriate lengths and rip the aprons slightly wider than the finished width. I used a dado head on the tablesaw to cut the tenons. Remove milling marks from the aprons with a handplane. Locate the center of each apron, measuring from the shoulders. Trace the apron patterns and bandsaw to shape. Clean up the bandsaw marks with a spokeshave, chisels, and files.

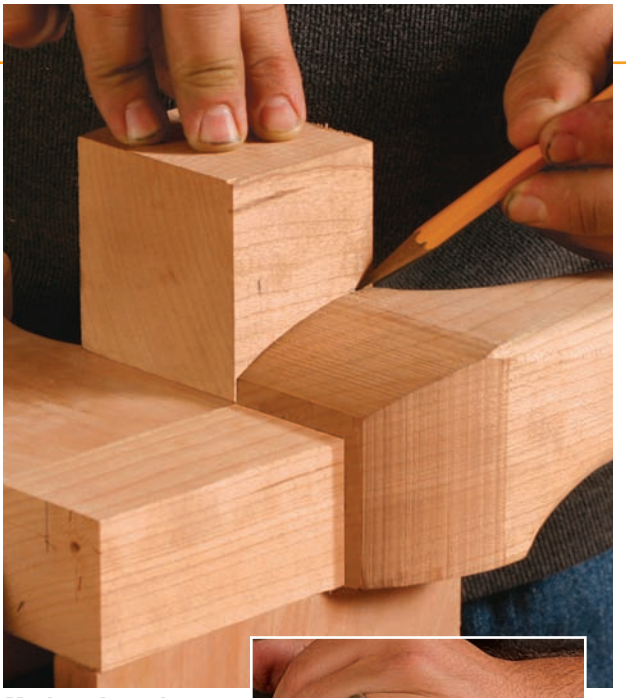
With the base dry-fitted together, trace the outside face of the aprons onto the leg posts, which were left fat earlier. Bandsaw the posts just proud of these lines, leaving wood that can be planed flush to the aprons after assembly. Glue up the base, checking for square and using moderate clamp pressure. Finish the assembly

Add transition blocks

PREP THE LEG FOR CORNER BLOCKS

Plane the post flush. *Use a shoulder plane, referencing off the surface of the apron.*

Locate the transition block. *Clamp the rough stock in place, aligned roughly with the bottom of the apron. Plane the top of the leg to match the block's height.*



Mark and cut the corner block. *Mark the block at the knee's apex to determine its thickness (above). Cut the block to shape and glue it in place before shaping it with a chisel (right).*

Shape the transition block. *Pare across the top of the block, using the leg as a reference surface. As you near the apron, round over the ledge made by the shoulder plane.*

Change directions. *Next, work toward the top of the leg, rounding the transition block until it meets the apron.*

by trimming the posts flush to the apron fronts with a shoulder plane.

To begin fitting the transition blocks, first handplane their mating surfaces so that they fit tightly to the legs and aprons. Now clamp the transition block temporarily into place, aligning it roughly with the flat bottom of the apron, and use it as a reference surface for the shoulder plane. You want to plane the top of the leg where it meets the post, bringing its height flush with the top of the transition block.

Remove the blocks and use a bandsaw to cut the curved side profiles on each one. Use chisels and sandpaper to smooth the outer profiles to a fair shape, and then glue the blocks onto the legs and aprons. Chisel the leg profile to shape with the transition blocks. Curve the transitions across their width from the leg to the apron. Continue shaping diagonally over the blocks to a final rounding.

Shape and attach the top

I like to spring-joint the top boards. To "spring" the joint, plane away a minimal amount of wood from the middle section

Fair the curves underneath. *Use a rasp to smooth the underside of the transition block where it meets the bottom of the apron.*

SHAPING THE TABLETOP'S EDGE

Using chisels, rasps, and files, work between a centerline drawn on the edge and layout lines on the faces.

of each edge, so clamping pressure is moderate. Then the joint requires only one center clamp for glue-up. After planing and/or sanding the top flat, lay out and bandsaw the top pattern slightly proud of the lines. A jigsaw is a good alternative for cutting these shapes, especially the large-radius corners. Fairing these shapes by hand will require the use of many tools—spokeshave, chisel, file, and scraper.

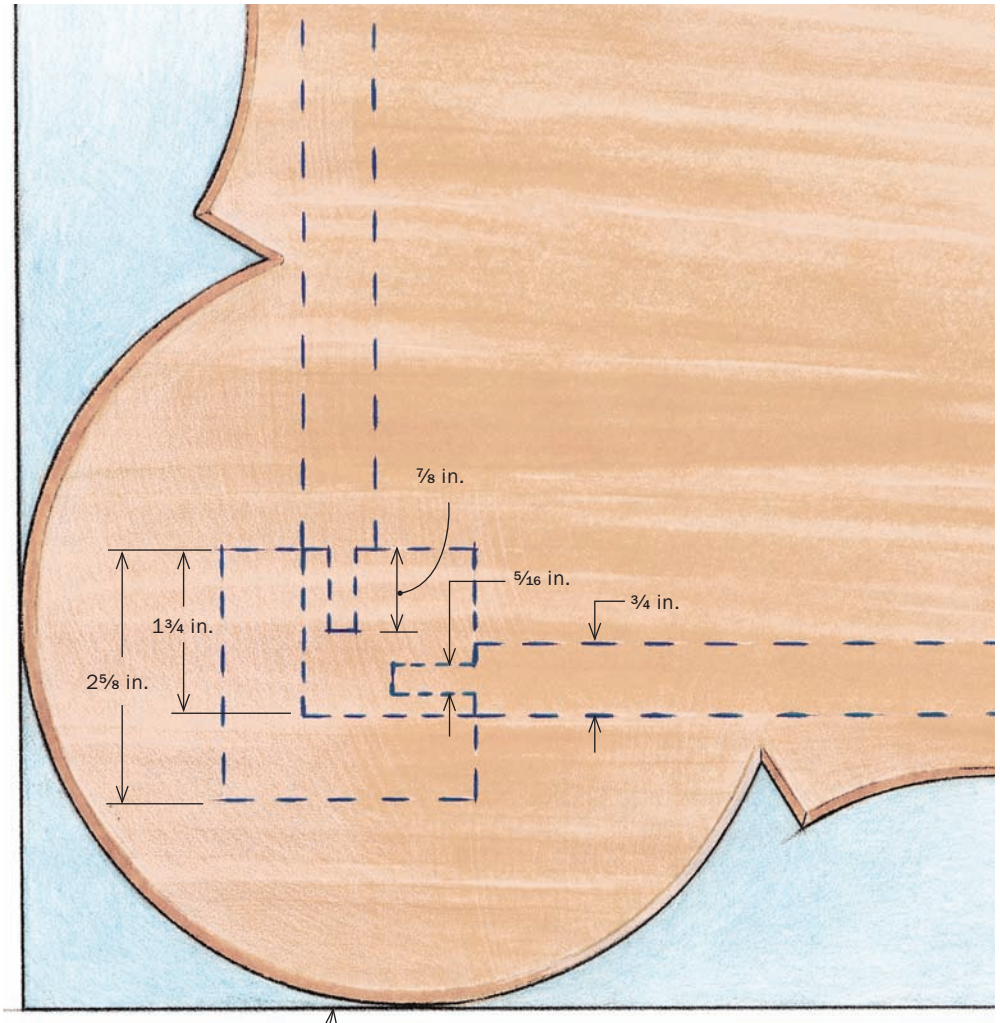
The edge profile is not a half-round shape. It's a section of a larger radius, which is a common profile used in 18th-century furniture. Layout is simple. Draw a single centerline on the edge, and a pair of lines (one on each face) marking the top and bottom of the curve.

The makers of many original pieces used glue blocks to attach their tabletops; however, I don't recommend this because it restricts seasonal movement. Six wood screws, driven through pocket holes in the aprons, hold this top down. Mount the two end screws tightly and widen the slots for the four side screws to allow wood movement. □

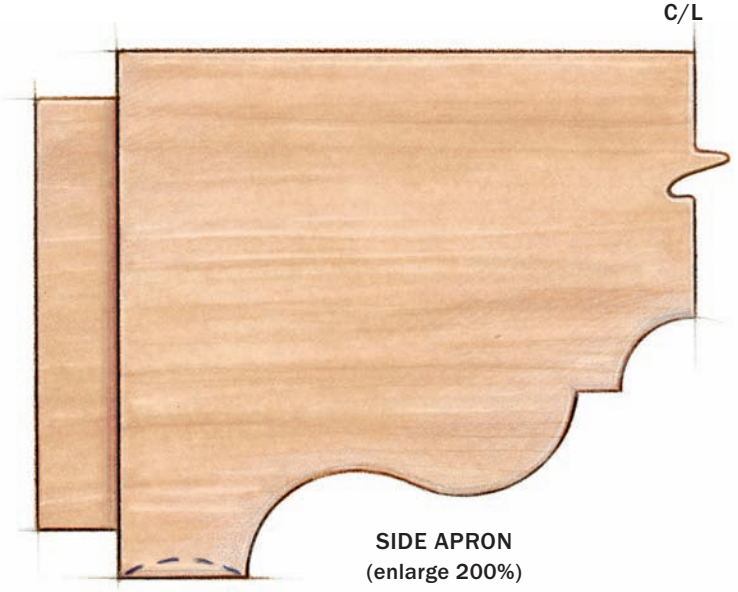
Dan Faia is a custom furniture maker in New Hampshire.

BASIC JOINERY SUPPORTS A GRACEFUL DESIGN

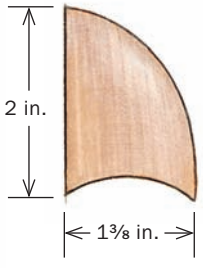
Simple mortise-and-tenon joinery brings the leg posts and aprons together, while the details lend distinction to the piece. The aprons are flush with the leg posts, and the curves in the cabriole legs are echoed by the rounded corners and edge details of the tabletop.



TABLETOP CORNER
(enlarge 200%)



SIDE APRON
(enlarge 200%)



TRANSITION BLOCK
(enlarge 200%)

Top, ¾ in. thick by 21½ in. wide by 33 in. long
Pocket hole for screw
Tenon, 5⁄16 in. thick by 4½ in. wide by ⅞ in. long
Aprons are flush with leg posts.
Transition block
Side aprons, ¾ in. thick by 5½ in. wide by 13¾ in. long (includes tenons)
Front aprons, ¾ in. thick by 5½ in. wide by 25¼ in. long (includes tenons)
Legs, 25¾ in. long. Blanks are 2⅝ in. sq. by approx. 31 in. long (extra material at top is used for transition blocks).
3½ in.
2 in.
⅝ in.
1½ in.
¼ in.
LEG
(enlarge 300%)
⅛ in.
¾ in.
TOP EDGE PROFILE
(actual size)
C/L
Shape this area after gluing transition block in place.
FRONT AND BACK APRON
(enlarge 200%)